IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Raymond Kurzweil	Art Unit	: 3661
Serial No.	: 10/734,618	Examiner	: Behncke, Christine M.
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Title	: VIRTUAL ENCOUNTERS		

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APPEAL BRIEF ON BEHALF OF RAYMOND KURZWEIL

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(1) Real Party in Interest

The real party in interest in the above application is the assignee, Kurzweil Technologies, Inc.

(2) Related Appeals and Interferences

Appellant is not aware of any appeals or interferences related to the above-identified patent application. However, Appellant notes that Application No. 10/734,617 is on appeal and the publication thereof, Pub. No. 2005/0131580, was cited to the office in the IDS filed on October 31, 2007. The subject matter of the co-pending application relates to other types of virtual encounters.

(3) Status of Claims

This is an appeal from the decision of the Primary Examiner in an Office Action dated **June 11, 2009** finally rejecting claims 1-26, all of the claims in the application. The claims have been twice rejected. Appellant filed a Notice of Appeal on **November 12, 2009**. Claims 1-26 are the subject of this appeal.

(4) Status of Amendments

Appellant filed a Reply to the Final Office Action. The Examiner has not entered the amendments in the Reply to the Final Office Action. Therefore, the claims in the Appendix reflect the state of those claims that was prior to the final action.

(5) Summary of Claimed Subject Matter

Claim 1

Appellant's claim 1 is directed to a virtual reality encounter system. "***Referring to FIG. 1, a virtual encounter system 10 includes…***" [1]

Inventive features of Appellant's claim 1 include a mannequin. "***a virtual encounter system 10 includes in a first location A, a mannequin 12a…***"[2]

[1] Specification, page 3, lines 10-11
[2] Specification, page 3, lines 10-11

Inventive features of Appellant's claim 1 also include a camera coupled to the mannequin, the camera capturing an image of a first, physical location in which the mannequin is disposed, and producing a first video image signal from the first captured image. "***Referring to FIGS. 2A and 2B, each mannequin 12a-12b includes a camera (e.g., camera 30a and camera 30b)…***"[3] "***Referring to FIG. 6, in operation, camera 30b and camera 36b record video images from Location B. The video images are transmitted wirelessly to communication gateway 16b as video signals.***"[4]

Inventive features of Appellant's claim 1 also include a processor that receives the first video image signal and morphs the first video image signal. "***Referring to FIG. 5, each communication gateway 16a-16b includes … a processor 80a-80b…***"[5] "***Communications gateway 16a again using conventional imaging morphing techniques alters the image of user 22b…***"[6]

Inventive features of Appellant's claim 1 also include an adapter to send the morphed, first video image signal to a communications network and sounds in connection with a theme of the morphed, first video image signal and to receive a second, video image signal from the communications network, the second video image signal of a second, different physical location. "***Each adapter 78a-78b establishes a bidirectional signal connection with network 24. Each interface 88a-88b receives, via transmitter 72a-78b in mannequin 12a-12b, video signals from cameras 30a-30b, 36a-36b and audio signals from microphones 42a-42b, 48a-48b.***"[7] "***Communication gateway 16a using conventional techniques can supplement the audio signals received with stored virtual sounds. For example, waves are added to a beach scene, or eagles screaming are added to a mountaintop scene.***"[8]

Inventive features of Appellant's claim 1 also include a set of goggles to render the second video image of the second, different physical location on a pair of displays that are

[3] Id., page 3, lines 30-31
[4] Id., page 5, lines 19-22
[5] Id., page 4, lines 27-28
[6] Id., page 8, lines 29-31
[7] Id., page 4, line 30 – page 5, line 3
[8] Id., page 8, lines 8-12

integrated with the set of goggles. "***Each interface 88a-88b sends video signals to displays 56a, 56b in goggles 20a-20b via receiver 70a-70b.***" [9]

Claim 15

Appellant's claim 15 is directed to a method of having a virtual encounter. "***Referring to FIG. 1, a virtual encounter system 10 includes…***" [10]

Inventive features of Appellant's claim 15 include receiving a first video image from a camera coupled to a mannequin, the mannequin disposed in a first physical location. "***Each interface 88a-88b receives, via transmitter 72a-78b in mannequin 12a-12b, video signals from cameras 30a-30b, 36a-36b***"[11]

Inventive features of Appellant's claim 15 also include morphing the first video image. "***Communications gateway 16a again using conventional imaging morphing techniques alters the image of user 22b…***"[12]

Inventive features of Appellant's claim 15 also include sending the morphed video image over a communications network and sounds in connection with a theme of the morphed video image. "***Each adapter 78a-78b establishes a bidirectional signal connection with network 24. Each interface 88a-88b receives, via transmitter 72a-78b in mannequin 12a-12b, video signals from cameras 30a-30b, 36a-36b and audio signals from microphones 42a-42b, 48a-48b. Each interface 88a-88b sends video signals to displays 56a, 56b in goggles 20a-20b via receiver 70a-70b.***"[13] "***Communication gateway 16a using conventional techniques can supplement the audio signals received with stored virtual sounds. For example, waves are added to a beach scene, or eagles screaming are added to a mountaintop scene.***"[14]

Inventive features of Appellant's claim 15 also include receiving a second video image from a camera coupled to a second mannequin disposed in a second physical location. ***"…when user 22a interacts with mannequin 12a in location A by seeing and hearing the mannequin, user 22a perceives seeing user 22b and hearing user 22b in location B. Likewise, user 22b***

[9] Specification, page 5, lines 3-5
[10] Id., page 3, lines 10-11
[11] Id., page 5, lines 1-2.
[12] Id., page 8, lines 29-31
[13] Id., page 4, line 30 – page 5, line 5
[14] Id., page 8, lines 8-12

listens and sees mannequin 12b but perceives listening and seeing user 22a in 25 location A." [15]

Inventive features of Appellant's claim 15 also include rendering the second video image using a set of goggles in the first location, the goggles including displays for rendering the image, wherein the displays are integrated with the set of the goggles. "***Each interface 88a-88b sends video signals to displays 56a, 56b in goggles 20a-20b via receiver 70a-70b.***" [16]

(6) Grounds of Rejection to be Reviewed on Appeal

(1) Claims 1-10, 13-21, and 24-26 stand rejected under 35 U.S.C. 103(a), as being unpatentable over Abbasi, US 6,786,863, in view of Yee, US 6,016,385, and in further view of Biocca et al., US 2002/0080094, and in further view of Saylor et al., US 7,466,827.

(2) Claims 11, 12, 22, and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Abbasi in view of Yee and Biocca, and in further view of Simmons, US 2003/0030397.

(7) Argument

Obviousness

"It is well established that the burden is on the PTO to establish a prima facie showing of obviousness, *In re Fritsch*, 972 F.2d. 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972)."

In *KSR Intl. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), the Supreme Court reversed a decision by the Court of Appeal's for the Federal Circuit decision that reversed a summary judgment of obviousness on the ground that the district court had not adequately identified a motivation to combine two prior art references. The invention was a combination of a prior art repositionable gas pedal, with prior art electronic (rather than mechanical cable) gas pedal position sensing. The Court first rejected the "rigid" teaching suggestion motivation (TSM) requirement applied by the Federal Circuit, since the Court's obviousness decisions had all advocated a "flexible" and "functional" approach that cautioned against "granting a patent based on the combination of elements found in the prior art."

[15] Specification, , page 3, lines 20-25
[16] Id., page 5, lines 3-5

In *KSR* the Supreme Court even while stating that: "the Court of Appeals drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias," warned that: "a factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."

> The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham*, 383 U. S., at 36 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))). Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.

With respect to the genesis of the TSM requirement, the Court noted that although "As is clear from cases such as Adams[17], a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

> Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the

[17] United States v. Adams, 383 U. S. 39, 40 (1966)

> [claimed] structure, "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

> Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

"The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

(1) Claims 1-10, 13-21, and 24-26 are patentable over Abbasi, Yee, Biocca, and Saylor.

Claims 1 and 15

For the purposes of this appeal only, claims 1, 5-10, 13-15, 19-21, 24 and 25 stand or fall together. Appellant's claim 1 is representative of this group of claims.

> Saylor does not teach sending sounds in connection with a theme of a morphed, first video image signal.

Claim 1 calls for, among other things, "an adapter … to send sounds in connection with a theme of the morphed, first video image signal…"[18] At least these features are neither described nor rendered obvious by any combination of Abbasi, Yee, Biocca, and Saylor.

[18] Without imputing Appellant's Specification into the claim, but in order to assist the Board in construing the claimed feature, the Specification at., pg. 8, lines 3-12 describes sounds in connection with a theme of a morphed video image signal:

The examiner stated on page 7 of the Final Office Action:

> **Both Abbasi and Yee describe communicating sounds to the user that are received at a remote location, but neither expressly describes sending sounds in connection with a theme of a morphed image. However, Saylor teaches simulating audio communications over a computer network wherein the sounds are in connection with a theme of a virtual reality simulation system being displayed to a user (column 3, lines 39-47).**

The examiner relies on Saylor to teach the feature pertaining an adapter to send sounds in connection with a theme of the morphed, first video image signal. Appellant contends that Saylor whether taken separately or in combination with the base references, neither describes nor renders obvious this feature of claim 1. Rather, than sending sounds in connection with a theme of the morphed, first video image signal, Saylor processes radio communications used in a flight simulation system to introduce impairment effects for aural realism.

Saylor, col. 1 lines 53 – 67 is reproduced below:

> **An example of aural realism provided by the invention is the replication of the sound of a UHF channel used in a flight simulation system. In this example, system 100 is used to accurately simulate voices that are received by a pilot over a UHF radio channel.**
>
> **As explained below, in one embodiment of the invention, the system is a client-server-client system. Any client can be a source and/or a destination. The server routes audio between the clients and introduces impairment effects as prescribed by simulation models and parameters. A source client is used to receive audio communications. The audio input is sampled and delivered to the server where it is filtered and injected with random noise and other effects, using digital signal processing (DSP) models. The impaired voice data is then delivered to a destination client.**

Saylor, col. 3 lines 38 – 47, cited by the examiner, is reproduced below:

> **In general, the transceiver and impairment models of engine 21 are created by analyzing a real world communications system and its effects on transmitted signals. Their processing is used to model characteristics of real world radio communications channels. The processing is then used to impose those characteristics on a signal, so that the signal simulates a signal that was transmitted through those channels. Thus, the model is used to**

"For the blanked out areas on the image, the communication gateway 16a overlays a replacement background, e.g., virtual environment to have the user 22b appear to user 22a in a different environment. … Communication gateway 16a using conventional techniques can supplement the audio signals received with stored virtual sounds. For example, waves are added to a beach scene, or eagles screaming are added to a mountaintop scene." Thus, the communication gateway sends sounds connected to the morphed video image, e.g. sounds connected to the replacement environment.

replicate the sound at the output end of a radio communications channel. Transceiver models model the type of radio or other transceiver.

As shown from these passages, Saylor merely imposes real world communications characteristics on transmitted signals through the use of processing. Neither in this paragraph nor anywhere else in Saylor does Saylor disclose sending sounds in connection with a theme of a morphed, first video image signal, much less provide any motivation to combine these teachings with the other cited references. One of ordinary skill after reading Saylor and combining Saylor with the Abbasi, Yee, Biocca references would not be led to "an adapter … to send sounds in connection with a theme of the morphed, first video image signal… ."

The examiner makes a clear error when referring to "sounds … in connection with a theme of a virtual reality simulation system" while claim 1 specifically requires "sounds in connection with a theme of the morphed, first video image signal." All words in a claim must be considered in judging the patentability of that claim against the prior art.[19] Here, the examiner has failed to consider whether the cited references disclose or render obvious the recited claim element and instead seeks to read the claim as claiming a different claim element.

Claim 1 further distinguishes over the combination of references, even assuming *arguendo* that Saylor's flight simulation system is considered to be a virtual reality simulation system. This follows because the sounds used with the flight simulation system are not connected with a morphed video image signal. Rather, as stated plainly in Saylor, the sounds are an example of the "**replication of the sound of a UHF channel.**"[20] Saylor merely modifies the audio reproduction of transmitted sounds, which is not the same as being connected to "a theme of the morphed, first video image signal." Saylor's audio replication can best be described as sounds in connection with a characteristic of an audio communication signal.

The examiner provides absolutely no explanation for how Saylor's audio replication is associated with a morphed video image or why one of ordinary skill seeking to provide the features of the morphed, first video image signal would look to Saylor's audio replication teachings. The connection of the sounds with a morphed video image comes, is found not in the prior art or in reasoned decision-making from the examiner, but is the result of improper *ex post*

[19] MPEP § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)).
[20] Saylor, col. 1 lines 53 – 55

reasoning based on the examiner's consideration of Appellant's claims and/or specification. Moreover, by substituting a "virtual reality simulation system" for the claim terms "morphed, first video image signal," the examiner has failed to consider the words of the claim and instead has made an inappropriate rejection of something other than the claimed subject matter.

The rejection over Saylor, Abbasi, Yee and Biocca does not meet the standard of a showing of obviousness.

Appellant contends that the examiner has failed to meet the burden of establishing a *prima facie* showing of obviousness.[21] In particular, the examiner's stated support for the rejection is inadequate for why one of ordinary skill would have thought to make the modification to the references to include sounds in connection with a theme of the morphed, first video image signal, as claimed. The support is limited to the statement "**Saylor teaches further means of achieving realism for a simulated environment, as the other references...**"

In particular, the examiner stated on page 7 of the Final Office Action:

> **It would have been obvious to one of ordinary skill in the remote communication arts to combine the teachings of Saylor with the invention of Abbasi, in view of Yee and Biocca, because Saylor teaches further means of achieving realism for a simulated environment, as the other references, by processing the audio signals to sound like the actual sound depending on the conditions/themes chosen by the user (column 1, lines 22-28).**

In making the obviousness rejection, the examiner cites four different references disclosing different categories of subject matter. Saylor is directed to providing audio communications for a simulation system.[22] Abbasi is directed to remote physical contact using mechanical surrogates that replicate anatomical components.[23] Yee is directed to a robot system having a communication system connecting a robot and a control center wherein an operator responds with natural movements to stimulus signals from the robot environment by issuing

[21] See *In re Fritsch*, 972 F.2d. 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972).
[22] Saylor, Abstract
[23] Abbasi, Abstract

commands that control the robot.[24] Biocca is directed to a teleportal system which provides remote communication between at least two users.[25]

Appellant contends that the examiner's alleged obviousness rejection is merely an exercise in improper *ex post* reasoning – i.e., using claim 1 as a roadmap to find each of different elements among a collection of references chosen by the examiner.

In *KSR* the Court stated that: "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning. See *Graham*, 383 U. S., at 36 (warning against a "temptation to read into the prior art the teachings of the invention in Issue" and instructing courts to "guard against slipping into the use of hindsight'" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co*., 332 F. 2d 406, 412 (CA6 1964)))."[26] The examiner has done exactly what the Court in *KSR* deemed improper, relying on Appellant's specification and or claims as a map to pick and choose teaching from several references to piece together a rejection.

The applied references are directed to different areas of technology. However, the examiner broadly attributes each of these references to a category of "**achieving realism for a simulated environment**." However, it is not the case that *any* combination of references within one category can render a claim obvious, as the examiner seems to imply. On the contrary, the examiner must make a determination whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art to support a *prima facie* case of obviousness.[27] Appellant contends that the examiner has only asserted that four references in a broad category can be pieced together to match the words of the claim, but the examiner has not made any determination whether the claimed invention as a whole would have been obvious from the teachings of these references taken as a whole.

The only further explanation offered by the examiner is a characterization of functionality in Saylor, "**by processing the audio signals to sound like the actual sound depending on the conditions/themes chosen by the user**." While this may describe the subject matter of Saylor, Appellant's claim 1 does not require: "processing audio signals to sound like an actual sound."

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[24] Yee, Abstract
[25] Biocca, Abstract
[26] KSR, 550 U.S. at 421.
[27] MPEP § 2142

Accordingly, the examiner has failed to meet the burden of establishing a *prima facie* showing of obviousness to support the rejection of claim 1.

Claims 5-10, 13 and 14 are patentable for at least the reasons discussed for claim 1.

Claims 19-21, 24 and 25 are patentable for at least the reasons discussed for claim 15.

Claims 2 and 16

For the purposes of this appeal only, claims 2 and 16 stand or fall together.

Biocca does not teach overlaying a virtual environment over one or more portions of the video image to form a virtual scene.

Claim 2 further limits claim 1 and requires that "the processor overlays a virtual environment over one or more portions of the video image to form a virtual scene."

The examiner stated on page 6 of the Final Office Action:

> **However, Biocca teaches a teleportal system to provide remote communication to a plurality of users ... wherein the processor overlays a virtual environment over one or more portions of the video image to form a virtual scene (figures 13 and 14, [0012], [0044], [0045], [0049], [0050]).**

The examiner relies on Biocca at figures 13 and 14, [0012], [0044], [0045], [0049], and [0050] for its alleged disclosure of the features set forth in claim 2. Applicant contends that none of the discussions pointed out by the examiner are relevant to the features of the claims. For example, the discussion in paragraph [0045] merely describes a teleportal headset using digital video cameras to capture images of a user's face; while paragraph [0050] discloses a preferred embodiment of the projective augmented-reality headset with a pair of LCD displays. Nothing in the reference describes or suggests that a processor overlays a virtual environment over one or more portions of the video image to form a virtual scene.

Further, the examiner also stated on page 2 of the Office Action:

> **The Examiner respectfully disagrees. Biocca teaches the transmitted images being morphed and viewed by the user "that blends physical with virtual objects with which users can interact and manipulate" ([0010]).**

Paragraph [0010] of Biocca is reproduced below:

> **In accordance with the teachings of the present invention, a teleportal system is provided. A principal feature of the teleportal system is that single or multiple users at a local site and a remote site use a telecommunication link to engage in face-to-face interaction with other users in a 3D augmented reality environment. Each user utilizes a system that includes a display such as a projective augmented reality display and sensors such as a stereo facial expression video capture system. The video capture system allows the participants to view a 3D, stereoscopic, video-based image of the face of all remote participants and hear their voices, view unobstructed the local participants, and view a room that blends physical with virtual objects with which users can interact and manipulate.**

Nowhere in this paragraph does Biocca describe or suggest a virtual environment or forming a virtual scene. Rather, Biocca merely describes a video-based image of non-virtual, remote participants in a room with non-virtual, physical objects as well as virtual objects. Applicant maintains that Biocca does not disclose the features set forth in claim 2, either in the various portions cited by the examiner or anywhere else.

Therefore, claim 2 is allowable over purported combination of Abbasi, Yee, Biocca and Saylor.

Claim 16 recites similar features of claim 2 and is allowable for analogous reasons discussed in claim 2.

Claims 3 and 17

For the purposes of this appeal only, claims 3 and 17 stand or fall together.

> Abbasi does not teach a body suit having tactile actuators, the tactile actuators receiving second tactile signals from the communications network.

Claim 3 further limits claim 2 and requires, in part, "a body suit having tactile actuators, the tactile actuators receiving second tactile signals from the communications network."

The examiner stated on page 6 of the Final Office Action:

> **Abbasi further describes…a body suit having tactile actuators, the tactile actuators receiving second tactile signals from the communications network (column 6, lines 17-42)**

Column 6, lines 17-42 of Abbasi are reproduced below:

> **As the second mechanical surrogate 165 is activated by the first response actuator process 145, it will stimulate the sensors that are used to perceive actions imparted onto it by a second user. In the case of a human lip surrogate, motion caused by activation of the control actuators 70 will cause the displacement and pressure sensors to perceive external stimulus. To prevent this type of unwanted feedback, the first response actuator process 145 conveys the actuator commands to the second sensor monitor process 150. These actuator commands allow the second sensor monitor process 150 to eliminate those components from the sensory feedback provided by the second mechanical surrogate 165.**
>
> **The contact experience is brought full circle by allowing the sensor array inputs received from the second mechanical surrogate 165 to be conveyed by the second sensor monitoring process 150 to the second response actuator process 155.**
>
> **The processes depicted in FIG. 5 are embodied in a computer program. A first instance 160 of the program executes in the first computer 15 while a second instance 165 of the program executes in the second computer 25. It should be noted that any process could be used to replace either of these program instances so long as the functional interface compatibility between any remaining instance of the program and the replacing process is achieved.**

Abbasi only describes actuators used with a portion of the body, e.g. in association with a lip surrogate. Nowhere in this paragraph or anywhere else does Abbasi describe a body suit or the use of a body suit with tactile actuators receiving tactile signals from the communications network.

Biocca describes a body suit that reflects light projected onto its surface. A portion of Biocca, paragraph [0032], is reproduced below:

> **Teleportal sites 101 and 102 preferably include a screen 103. Screen 103 is made of a retro-reflective material such as beads-based or corner-cube based materials manufactured by 3M® and Reflexite Corporation. The retroreflective material is preferably gold which produces a bright image with adequate resolution. Alternatively, other material which has metalic fiber adequate to reflect at least a majority of the image or light projected onto its surface may be used. The retro-reflective material preferably provides about 98 percent reflection of the incident light projected onto its surface. The material retro-reflects light projected onto its surface directly back upon its incident path and to the eyes of the user. Screen 103 can be a surface of any shape, including but not limited to a plane, sphere, pyramid, and body-shaped, for example, like a glove for a user's hand or a body suit for the entire body.**

Thus, like Abbasi, Biocca also does not describe or suggest a body suit with tactile actuators receiving tactile signals from a communications network. Biocca only describes a

body suit having a material that retro-reflects light projected onto its surface. Yee and Saylor also do not describe or suggest a body suit with tactile actuators.

Therefore, claim 3 is allowable over purported combination of Abbasi, Yee, Biocca and Saylor.

Claim 17 recites similar features of claim 3 and is allowable for analogous reasons discussed in claim 3.

Claims 4 and 18

For the purposes of this appeal only, claims 4 and 18 stand or fall together.

Abbasi does not teach motion sensors positioned throughout a body suit, the motion sensors sending first motion signals corresponding to movements of each sensor relative to a reference point.

Claim 4 further limits claim 3 and requires, in part, "motion sensors positioned throughout the body suit, the motion sensors sending first motion signals corresponding to movements of each sensor relative to a reference point."

The examiner stated on page 6 of the Final Office Action:

> **Abbasi further describes…motion sensors positioned throughout the body suit (Figure 3), the motion sensors sending first motion signals corresponding to movements of each sensor relative to a reference point (column 5, lines 28-45)**

Column 5, lines 28-45 of Abbasi are reproduced below:

> **As FIG. 3 is a pictorial representation of a human hand interface. One significant advent of the present invention is the notion of having complimentary surrogate apparatus. In the case of patient diagnosis, a doctor would use a human hand interface 90. The human hand interface 90 is worn on the hand analogous to a glove. In one preferred embodiment, the human hand interface 90 comprises a thumb sleeve 95 and four finger sleeves. Each sleeve further comprises a plurality of displacement sensors 105. The displacement sensors detect movement of the user's fingers in the glove. Each sleeve further comprises tactile actuators. These tactile actuators apply surface pressure to the fingers in the glove.**
> **FIG. 4 is a pictorial representation of a human hand surrogate. The human hand surrogate 120 is the complimentary surrogate to the human hand interface 90. Where the human hand interface 90 has displacement sensors,**

the human hand surrogate comprises linear displacement actuators 125 that manipulate the fingers 130 or thumb 135.

Abbasi only describes a human hand interface, e.g., a glove. Neither in this paragraph nor anywhere else does Abbasi describe a body suit or positioning motion sensors in a body suit. Yee, Biocca and Saylor also do not describe or suggest motion sensors positioned throughout a body suit.

Therefore, claim 4 is allowable over purported combination of Abbasi, Yee, Biocca and Saylor.

Claim 18 recites similar features of claim 4 and is allowable for analogous reasons discussed in claim 4.

Claim 26

For the purposes of this appeal only, claim 26 stands or falls alone.

The examiner has not provided support for the rejection of claim 26.

Claim 26 further limits claim 1 and requires that "the goggles receive a morphed second video image from the processor." However, Appellant contends that nothing in the Final Office Action appears to support the rejection of this claim. "When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified."[28] The rejection of claim 26 relies on four references describing complex technology, but the examiner has not indicated the particular part or parts of these references relied on in making the rejection. Accordingly, the examiner has not provided the support for the rejection required by the rules and the rejection is improper.

[28] 37 C.F.R. 1.104(c)(2)

(2) Claims 11, 12, 22 and 23 are patentable over Abbasi, Yee, Biocca, and Simmons.

The examiner has not made a proper rejection of the claims over Abbasi, Yee, Biocca, and Simmons.

Appellant contends that these claims are allowable at least for reasons given for claim 1. Appellant further contends that the examiner's rejection of claims 11, 12, 22, and 23 is improper. These claims depend directly or indirectly from either claim 1 or 15, which the examiner rejected as obvious over Abbasi, Yee, Biocca, and Saylor.

Thus, any proper rejection of these dependent claims must at least include the Saylor reference, because the features of claims 1 and 15 that are allegedly described by Saylor are incorporated by dependency into claims 11, 12, 22, and 23.

Conclusion

Appellant submits that claims 1-26 are patentable over the art of record. Therefore, the examiner erred in rejecting Appellant's claims and should be reversed.

The brief fee of $270 is enclosed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Appendix of Claims

1. A virtual reality encounter system comprising,

a mannequin;

a camera coupled to the mannequin, the camera capturing an image of a first, physical location in which the mannequin is disposed, and producing a first video image signal from the first captured image;

a processor that receives the first video image signal and morphs the first video image signal;

an adapter to send the morphed, first video image signal to a communications network and sounds in connection with a theme of the morphed, first video image signal and to receive a second, video image signal from the communications network, the second video image signal of a second, different physical location; and

a set of goggles to render the second video image of the second, different physical location on a pair of displays that are integrated with the set of goggles.

2. The system of claim 1, wherein the processor overlays a virtual environment over one or more portions of the video image to form a virtual scene.

3. The system of claim 2, wherein the mannequin is a humanoid robot having tactile sensors positioned along the exterior of the robot, the sensors sending first tactile signals to the communications network;

the system further including:

a body suit having tactile actuators, the tactile actuators receiving second tactile signals from the communications network.

4. The system of claim 3, further comprising:

motion sensors positioned throughout the body suit, the motion sensors sending first motion signals corresponding to movements of each sensor relative to a reference point, the first motion signals transmitted to the communications network; and wherein the humanoid robot is a first humanoid robot and the system further comprises:

a second humanoid robot at the second location, the second humanoid robot receiving, from the communications network, the first motion signals from the motion sensors, the first motion signals from the motion sensors causing a movement of the second humanoid robot that is correlated to a movement of the body suit.

5. The system of claim 4, wherein the second humanoid robot includes motion actuators corresponding to the motion sensors, the motion actuators causing the second humanoid robot to move.

6. The system of claim 4, wherein the second humanoid robot has life-like features, the second humanoid robot comprises:

a body; and

a microphone coupled to the body, the microphone for sending audio signals, corresponding to sounds in the second physical location, to the communications network.

7. The system of claim 6, wherein the set of goggles further includes a transducer to render the audio signals, received from the communication network, corresponding to the sounds in the second physical location.

8. The system of claim 3, further comprising:

a first microphone coupled to the first humanoid robot;

a second humanoid robot in the second location, the second humanoid robot supporting a second microphone and a second camera; and

a second set of goggles in the second location to receive the morphed first video image signals and a second earphone to receive the audio signals from the first microphone.

9. The system of claim 1, further comprises:

a first communication gateway in the first location;

a second processor in the second location to process video from the second location; and

a second communication gateway in the second location, the second processor connected to the first processor via the communications network.

10. The system of claim 7, wherein the communications network comprises an interface having one or more channels for:

receiving the audio signals from the microphone;

receiving the video image from the camera;

sending the video signals to the set of goggles; and

sending the audio signals to the transducer.

11. The system of claim 7, wherein the body includes an eye socket and the camera is positioned in the eye socket.

12. The system of claim 7, wherein the body includes an ear canal and the microphone is positioned within the ear canal.

13. The system of claim 1, wherein the set of goggles, comprises a wireless receiver to wirelessly receive the morphed video image.

14. The system of claim 6, wherein the robot comprises a transmitter to wirelessly send the audio signals, the tactile signals, the motion signals and the video image to the communications network.

15. A method of having a virtual encounter, comprising:

receiving a first video image from a camera coupled to a mannequin, the mannequin disposed in a first physical location;

morphing the first video image;

sending the morphed video image over a communications network and sounds in connection with a theme of the morphed video image;

receiving a second video image from a camera coupled to a second mannequin disposed in a second physical location; and

rendering the second video image using a set of goggles in the first location, the goggles including displays for rendering the image, wherein the displays are integrated with the set of the goggles.

16. The method of claim 15, further comprising:

overlaying a virtual environment over one or more portions of the video image to form a virtual scene.

17. The method of claim 16, wherein the mannequin is a humanoid robot and the method further comprising:

sending first tactile signals from the humanoid robot to the communications network, from tactile sensors positioned along the exterior of the robot; and

receiving second tactile signals from the communications network at a body suit in the first location, the body suit having tactile actuators responsive to the second tactile signals.

18. The method of claim 17, further comprising:

sending first motion signals from motion sensors positioned over the surface of a human, the first motion signals corresponding to movements of sensors relative to a reference point, the first motion signals being transmitted to a communications network.

19. The method of claim 18, further comprising:

receiving, at the humanoid robot, second motion signals sent by motion sensors disposed in a second, different physical location; and

causing a movement of the humanoid robot that is correlated to a movement of the human based on the second motion signals received from the motion sensors, wherein receiving comprises

receiving motion signals from the motion sensors at corresponding motion actuators coupled to the humanoid robot the humanoid robot to move.

20. The method of claim 16, further comprising:

sending first audio signals over the communications network, the audio signals being produced from a microphone coupled to the robot in the first physical location; and

transducing second audio signals received from the communications network using a transducer embedded in the set of goggles, the second audio signals from a second, different physical location.

21. The method of claim 20, further comprising:

sending the second audio signals to the communications network from a second microphone coupled to a second humanoid robot having life-like features;

sending the second video image to the communications network from a second camera coupled to the second humanoid robot;

rendering the second image received from the communications network onto a monitor coupled to a second set of goggles; and

transducing the audio signals received from the communications network using a second transducer embedded in the second set of goggles.

22. The method of claim 20, wherein the humanoid robot includes an eye socket and the camera is positioned in the eye socket.

23. The method of claim 20, wherein the humanoid robot includes an ear canal and further comprising positioning the microphone within the ear canal.

24. The method of claim 20, wherein the set of goggles, comprises a receiver to receive the morphed video image.

25. The method of claim 20, wherein the humanoid robot further comprises a transmitter to wirelessly send the audio signals and the video image to the communications network.

26. The system of claim 1, wherein the goggles receive a morphed second video image from the processor.

Evidence Appendix

NONE

Related Proceedings Appendix

NONE